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Editorial Department.

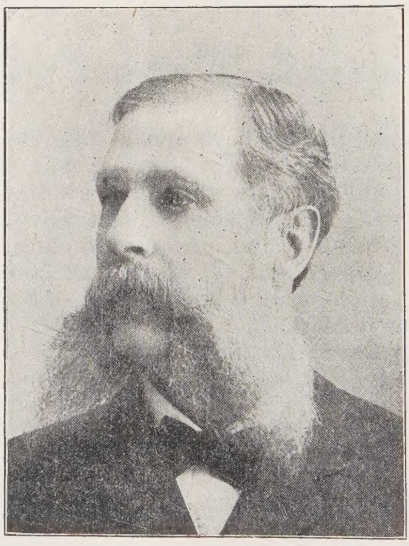
Virchow.

THE influence which one life can have on the progress of a century is illustrated in the remarkable career of Virchow. A man of a type of indefatigable workers who make events, make history in the wide field of science, and leave behind a record of persistent and uncompromising devotion to a fixed purpose, out of which has come everlasting fame. Virchow saw, he applied and established, and by so doing rose to the highest position among the great scientists of the world. His studies in biology revolutionized the teachings of medical science and laid the foundation upon which rests today the science of modern medicine. His reformatory teachings have stood the criticism of the past half century, and are now firmly and indisputably established. Today the scientific world looks upon his work as the culmination of the greatest in modern medicine. The future while opening possibilities for more specific investigations, more refined inquiry will never depart from the facts established by the labors of Virchow.

In other fields of knowledge and research he was eminently a student, viz., as an anthropologist, archeologist, hygienist, and as a politician. To describe his work in these several fields would be to respect the same endeavors used in his research work in pathology; the same devotion to principle, to facts and to truth.

His versatility in the realm of science and politics has about it an interest which should attract the young man of today. It should teach the lesson of broad culture, because while men achieve greatness by devotion to one idea or group of ideas, yet, the greatest achievements are the enduring results of applied knowledge which comes from broad culture.

In the death of Virchow civilization loses one of its greatest benefactors, and devotees to the best and highest in human endeavors. His labors were labors of love; his career one of simple devotion to a fixed purpose. The climax of such a career is the character of the man evolved by the constant application to the search for truth and his contact with



S. P. COLLINGS, M. D.,
Hot Springs, Ark.
President Mississippi Valley Medical Association.

the world of science and the varied phases of human characteristics to be met in the tempestuous whirl of political life. His achievements, his honors only sought to give that glorious sitting for his useful life, that sitting which marks greatness wherever found, viz., simplicity. Virchow will ever be regarded as the one of the greatest men of the nineteenth century. F. P. N.

Railway Surgeons Meet.—The American Academy of Railway Surgeons will meet at Kansas City, under the presidency of Dr. A. F. Jonas, of Omaha, on October 2 and 3.

Mr. Geo. M. Hall is detailing the city for the Gardner-Barada Company, of Chicago. Their uriseptin and nutryl have already a happy reputation with the St. Louis profession.

Dr. H. L. MacLaury, of Lea Brothers & Co., spent a few days in St. Louis early in the month. We had the pleasure of smoking some of his cigars and absorbing some of the enthusiasm which goes with his magnetic presence. MacLaury has but one fault, and that is his lack of appreciation of the beauty of St. Louis as a place of residence.

Medical Society of the Missouri Valley.—This society held an interesting meeting at Sioux City on September 18th. A number of good papers were presented, and at the close of the session the members were given a banquet at the Garrettson by the local profession. The officers elected for the ensuing year are as follows: President, Dr. J. M. Barstow, Council Bluffs; First Vice-President, Dr. Mary Strong, Omaha; Second Vice-President, Dr. R. E. Conniff, Sioux City; Treasurer, Dr. Donald Macrae, Council Bluffs; Secretary, Dr. Chas. Wood Fassett, St. Joseph.

The Mississippi Valley Medical Association will hold its twenty-eighth annual session in Kansas City, October 15, 16 and 17. It is assured that the meeting will be of great interest and value by reason of the fact that the preliminary programme, as issued, shows good subjects are to be discussed by well-known authors, and the addresses are in the hands of two of the most progressive of the younger members of the profession in the association, viz., Dr. Hugh Patrick and Dr. George M. Crile. The profession of Kansas City is noted for its hospitality, and on this occasion with the hustling Cordier to direct the details of arrangements we feel sure of a good time, and a good meeting. The M. V. M. A. in number of members and progressiveness stands next to the American Medical Association. The Wabash R. R. has been chosen as the official route of the Mississippi Valley Medical Association for the Kansas City meeting. Special accommodations will be arranged for speedy and comfortable transit from the East, as it is the most direect route from Buffalo, Detroit, Cleveland, Chicago, Indianapolis, Louisville and St. Louis. The itinerary will be announced by special notices. Its meetings are always full of vim and timely in discussions. We predict a large meeting.

The Reviewer's Table.

Books, Reprints, and Instruments for this department, should be sent to the Editors, St. Louis.

A Text-Book of Diseases of Women. By Charles B. Penrose, M. D., Ph. D., formerly Professor of Gynecology in the University of Pennsylvania. Fourth edition, revised. Octavo volume of 539 pages, handsomely illustrated. Philadelphia and London: W. B. Saunders & Co. (Cloth, $3.75 net).

Regularly every year a new edition of this excellent text-book is called for, and although it is distinctly a text-book, it appears to be in as great favor with physicians as with students. Indeed this book has taken its place as the ideal work for the general practitioner. The author presents the best teaching of modern gynecology, untrammeled by antiquated ideas and methods. In most instances only one plan of treatment is described. This is a great advantage, since it prevents confusion on the part of the reader and also gives space for carefully detailed instruction in the methods recommended. In every case the most modern and progressive technique is adopted, and the main points are made clear by excellent illustrations. The new edition has been carefully revised, much new matter has been added, and a number of new original illustrations have been introduced. In its revised form this volume continues to be an admirable exposition of the present status of gynecologic practice in this country.

AMONG THE MAGAZINES

Scribner's—Frederic Remington's striking drawings of Western life are familiar to thousands, reproduced in black and white, but very few had the opportunity to know how beautiful and artistic is the orignal coloring. In the October Scribner's four of Remington's best drawings called "Western Types" will be reproduced in their original colors.

Justin Henry Smith, the author of the papers on "The Prologue of the American Revolution" which are to appear in The Century during the year 1903, has been Professor of Modern History at Dartmouth since the chair was established in 1897. Professor Smith is a graduate of Dartmouth in the class of '77, and he is said to be the fourth who received a perfect mark there, Rufus Choate and the late Chief Justice Field of Massachusetts was at one time a partner in a large publishing house and was for several years at the head of its literary department, but in 1897 he dropped business and after further travel and study abroad brought out "The Troubadour at Home," a reconstruction of the personalities of the medieval Provencal poets.

Fortnightlettes

DR. R. L. GREEN, of Peoria, made St. Louis friends a short visit recently while en route home from a trip through the South.

DURING August there were two new cases of bubonic plague in San Francisco, making a total for 1902 of 13 cases, with 12 deaths.

DURING the month of June 316 emigrants were barred from entering the country owing to the fact that they were either diseased or physically deformed.

REPORTS received up to September 1st show that since the outbreak of cholera in the Philippines there have been 21,408 cases and 161,05 deaths in the archipelago. Of this number 48 Americans and 18 Europeans have died since the epidemic began.

ACCORDING to the Metaphysical Magazine, the title "Doctor" was first conferred upon Inerius of the University of Bolona, in the twelfth century. The first "doctor of medicine" was Gulielmo Gordenio, who received the honor from the College of Aosti, also in Italy, in 1220.

SEVERAL sufferers from writers' cramp are reported to have obtained great relief by becoming enthusiastic golfers. This game requires the use of the upper extremities just to the degree adapted to people who have lived sedentary life. The movements are necessary co-ordinate, and they are combined with proper exercise of the lower extremities, and a large amount of time is passed in the open air.

THE number of students in Germany was 8,141 in 1897, while at present it is only 6,749, a decline of nearly 17 per cent in the last five years. Berlin and Munich have about the same number of medical students as in previous years, 1,018 and 1,046 respectively, and the attendance at Rostock, Kiel and Heidelberg has increased. The decline is most apparent at Wurzburg, Leipsic, Griefswald and Breslau.

CHOLERA IN ITALY AND EGYPT.—Cholera has broken out in Robilante, Italy, and much anxiety is felt in Rome, where the sanitary condition is especially poor this year, owing to the extreme heat. Out of 3000 cases in Robilante 20 have succumbed to the disease. The epidemic is supposed to have originated from a workman returned from Egypt, where since July 15 there have been 2,238 cases of cholera, of which 1,696 died.

WHEN he is first engaged in the military service, a Russian surgeon starts upon the salary of $400 a year. On this pay he remains four years, when he is advanced to $500 yearly for four years. Four years later this is increased to $650; then to $750; the final remuneration, the highest which he can obtain, being $2750 a year. When compared with the salaries of American army surgeons, it will be noted that Russia pays less than half the amount received by United States military surgeons.

In Europe smoking is growing so rapidly in favor among the fair sex that on some of the Belgian railroads smoking compartments are to be provided exclusively for women.

There are one million blind people in the world. The largest proportion is found in Russa, where nearly 200,000 walk in darkness. The chief causes are bad ventilation and inadequate treatment. In the world there is one blind person to every 1,500 inhabitants.

London's Large Hospitals.—St. Bartholomew's Hospital contains 734 beds; Charing Cross Hospital, 230 beds; St. George's Hospital, 351 beds; Guy's Hospital, 650 beds; King's College Hospital, 220 beds; London Hospital, 800 beds; St. Mary's Hospital, 281 beds; Middlesex Hospital, 340 beds; St. Thomas' Hospital, 602 beds; University College Hospital, 188 beds; Westminster Hospital, over 200 beds and Royal Free Hospital for Women, 170 beds. These 12 hospitals, the largest in London, accommodate 4766 patients.

Mr. F. L. E. Gauss.—The election of Mr Frank L. E. Gauss to the secretaryship of the Searle & Hereth Company is an accomplished fact, which is a great satisfaction to Mr. Gauss' many friends in St. Louis. During the years he had charge of the St. Louis agency of his company, Mr. Gauss earned the esteem of the profession by his energy and integrity. His advancement must materially increase the strength and popularity of the Searle & Hereth Co.

The next meeting of the American Roentgen Ray Society will be held in the city of Chicago on December 10 and 11 of the current year. G. P. Girwood, M.D., President, Montreal, Can.; James B. Bullitt, M. D., Secretary, 205 W. Broadway, Lousiville, Ky. There has been secured a most excellent local committee of arrangements composed of well known and leading men of Chicago under the chairmanship of Dr. Ralph R. Campbell.

Calgary's Climate Cures Consumption.— Dr. James Stewart, Montreal, professor of medicine in McGill University, has returned home after an extended tour of the Canadian Northwest Territories. He was very much impressed with the climate round Calgary and believes that that section of the Dominion along with certain parts of British Columbia offer as good opportunities as any other climate in the world for the cure of consumption. The neighborhood of Calgary would be a very fine location for a large sanitarium.

The ten cities in the United Kingdom containing the largest number of medical practitioners are the following in numerical order: London, Glasgow, Edinburgh, Manchester, Liverpool, Dublin, Birmingham, Leeds, Brighton and Belfast. The average number of physicians, per 1,000 of the population, reaches its highest limit, 23.08, at Cliften; next comes Bournemouth, 24.38; Harrowgate 21.11; Cambridge 21.09; Weston-Super-Mare 20.47; and Bath 20.07. The other cities all contain less medical practitioners. In London there are about 12 medical men per 100,000 of the population.—*Lancet.*

Original Department.

PAPERS for the Original Department should be in hand one month in advance, and contributed to THE MEDICAL FORTNIGHTLY exclusively. A liberal number of extra copies will be furnished authors, and reprints may be obtained at reasonable rates, if request accompanies the manuscript. Engravings from photographs furnished free.

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Diagnosis of Cancer of the Breast.

By Alfred Roulet, B. S., M. D.,

ST. LOUIS.

Read at the Chicago meeting of the Tri-State Medical Society, April 4, 1902.

THERE is no condition in which an early diagnosis is of greater importance than in cancer, and in no other condition is the failure to make a correct diagnosis attended by more deplorable results. There can be no doubt that in its earliest stages every cancer is a strictly localized condition, and that successful treatment depends entirely upon early diagnosis and immediate radical extirpation of the malignant focus.

An early diagnosis of cancer of the breast requires not only a thorough physical examination, together with a careful study of the best clinical history of the case that it is possible to obtain, but a most searching analysis of everything that could in any way have the slightest bearing on the subject. The microscope should have no place in the pre-operative diagnosis of cancer, though it is often of great value in confirming a diagnosis after the tumor has been removed.

Regarding the etiology of cancer but little is known, but the parasite theory being as yet unproven, and assuming that the theory that all new growths develop from a pre-existing focus of embryonal tissue is correct, we can only consider the influences which clinical experience and observation would suggest are concerned in the awakening of this dormant focus into activity. From our present knowledge the absence of this focus would preclude the formation of a tumor, no matter what influences were at work, while in the absence of a proper stimulus a carcinomatous focus might easily remain quiescent during life of the patient.

Age is a factor of considerable importance, cancer being most prevalent among persons past middle life. In women it occurs most frequently

between the ages of 40 and 50 immediately preceding the menopause. It occurs next in order of frequency between the ages of 50 and 60, the decade between 30 and 40 comes next, and is followed by the decade between 60 and 70. Cases before the age of 30 are exceedingly rare. It is not altogether improbable that although cancer of the breast commonly appears during the period of functional decline of that organ, the frequently recurring hyperemia of the breast incident to menstruation, pregnancy and lactation, may be a predisposing factor in its development. The fact that cancer occurs three times more frequently in the breasts of women who have borne children than in those who are sterile, and the extreme rarity with which it occurs in the rudimentary mammary gland of the male would apparently substantiate this supposition.

Traumatism has long been considered a frequent cause of cancer, and it is possible that fissures of the nipple, chronic inflammations and long continued irritations, as the pressure of an ill-fitting corset, may exercise a contributory influence, either by directly stimulating the development of a cancerous focus, or by reducing the physiological resistance of the adjacent tissues. In a series of 114 cases collected by Winiwarter, 24 had had mastitis, and in a series of 170 cases collected by the same writer, 12 gave a history of previous injury.

The etiological relation between Paget's disease (eczema of the nipple and areola) and carcinoma has long been recognized. In a paper on the relation of this disease and cancer of the breast, read by Paget in 1874, he said: "It has happened that in every case which I have been able to watch, cancer of the mammary gland has followed within at most two years, and generally within one year."

Regarding the role of heredity in the transmission of cancer, the evidence while suggestive is not conclusive. In a series of 1164 cases collected by Gross, in but 55 was there a history indicating hereditary influence. Senn reports that he has repeatedly met with cancer of the breast in two succeeding generations; Sibley relates a case of cancer in a woman and in five of her daughters; Broca has reported a case, quoted by Billroth, of cancer occurring in a woman, in four of her daughters, and in five of her grand children. I recall a case in my own practice of a woman with a cancer of the breast, whose father had died of a cancer of the stomach and whose grandmother had died of a "running sore in the breast." Paget has reported 322 cases in which a history of cancer was obtained in 78. In the investigation of heredity as a possible factor, it is not enough to ascertain the existence or non-existence of malignant disease in the patient's parents and immediate family circle, but the investigation should include, to the most remote degree, all blood relations about whom it is possible to obtain anything like reliable information.

Shattuck has called attention to the fact that cancer may show itself repeatedly in certain houses, and reports four cases occurring in persons who were not related, but were living in the same house. Several similar instances are on record. Dr. Daniel Lewis, of New York, in a recent special investiagtion of the town of Brookfield, N. Y., found a large number of "cancer-houses," so-called from their having had two or more cases of

cancer develop in them, while Plainfield township, near by, a cancer center was discovered where nearly all the houses within a radius of a quarter of a mile have had from one to five cases each.

Ordinarily the first symptom noticed by the patient is a hard indurated mass or nodule in the breast, situated, as a rule, in the upper outer quadrant, or immediately below the nipple. Usually this nodule is discovered by accident, as there has been no previous pain or discomfort, and no constitutional disturbances. Occasionally the appearance of the tumor is preceded by sharp, stabbing pains, but it is more than probable that there is not the slightest connection between the development of a cancer and this pain, as many women between the ages of 35 and 45 suffer with neuralgia of the breast, especially at or near the menstrual period The development of a cancer is not necessarily attended with any particular pain, though many patients do complain of sharp, lancinating pains occurring at varying intervals and lasting but a few moments, but these pains are by no means a constant symptom, and their presence or absence is of slight diagnostic value.

The idea that cancer is attended with the most agonizing pain is unfortunately deeply rooted in the minds of the laity, and it is often difficult to convince them that a cancer may occur without causing any appreciable suffering.

The tumor is never distinctly movable, as are the benign growths, neither can its outlines be clearly distinguished on account of the infiltration of the surrounding tissues. The nipple is frequently retracted, while immediately over the tumor the skin may be more or less pitted. As the tumor increases in size the overlying skin becomes reddened and infiltrated and breaks down forming an ulcer which progressively increases in size and manifests not the slightest tendency toward healing. The cancer not only involves the skin, but it extends backward into the retro-mammary connective tissue, the pectoral fascia, the pectoral muscles, and it may even penetrate the chest wall and involve the pleura. As the disease progresses, the axillary glands become enlarged and matted together, making a firm nodular mass which completely fills the axilla. Often there may be noted a fullness in the supra-clavicular region on the diseased side which is not present on the other. This means that the axillary infection has extended beneath the clavicle and that from this point it may follow the chain of lymph nodes accompanying the internal mammary artery, or it may involve the bronchial glands at the root of the lungs. According to Volkmann, when the tumor is situated near the median line the axillary lymphatics of both sides may be affected Occasionally the axillary enlargement becomes so excessive as to seriously interfere with the venous circulation of the arm and edema and gangrene may result.

In advanced cases of cancer of the breast, a positive diagnosis is made with comparative ease, but in the early stages it is much more difficult and is only made by a rigid process of exclusion. In all cases abscess, syphilis, tuberculosis, actinomycosis, sarcoma, and the benign tumors must be absolutely excluded before a positive diagnosis of cancer is made.

A knowledge of the relative frequency with which certain growths appear, the time of life most favorable for their development, the age of the

patient, together with the size, the degree of mobility, the rate of growth of the tumor and the extent of lymphatic involvement are valuable guides in making a correct diagnosis. For example, a soft, rapidly growing tumor in the breast of a woman of 20 would probably be either an abscess or a sarcoma, but scarcely a carcinoma, while the development of a dense nodular tumor in the breast of a woman of 50 would be regarded with grave suspicion, especially if it increased rapidly in size, was immovable in the gland substance, was adherent to the skin, ulcerated, and the axillary lymphatics became enlarged and matted together.

While it is desirable to know the exact time at which a tumor appeared, it is often impossible to ascertain this point with any degree of certainty. Unless the tumor is causing the patient actual discomfort the discovery ordinarily will be entirely accidental. Nevertheless, after making allowance for the inaccuracies of the patient's statements, it is often possible to derive information that will be of value in estimating the rapidity of the growth. For example, by comparing the size of the tumor when it was discovered by the patient with its size when first seen by the physician, it is possible, by considering the length of time that has elapsed, to form an approximately correct idea of the rapidity of its growth.

A careful examination of the lymphatics should be made in all cases where cancer is suspected. The presence of large matted lymphatics in the axilla on the diseased side should suggest cancer or infection, but the apparent absence of lymphatic involvement alone would not justify the conclusion that the tumor was of a non-malignant nature. It is sometimes impossible, as in corpulent women, to detect nodes as large even as a pigeon's egg. When the lymphatics generally, but particularly those in the epitrochlear and postauricular regions are enlarged and indurated, syphilis should be suspected and the tumor subjected to the closest scrutiny to exclude the possibility of a gumma. Syphilitic lesions are often multiple and show a tendency to heal under vigorous antisyphilitic treatment. A carcinomatous ulcer is almost invariably an isolated affection and never heals, though it may remain stationary for a comparatively long time. Tuberculosis of the breast is rarely seen, but when it does occur it is commonly secondary to tuberculosis of some other part of the body. The nodules may be disseminated throughout the gland, or they may be collected in one or more comparatively large masses. The history of the case is of the greatest value in making the diagnosis.

A subacute abscess often bears a close resemblance in signs and symptoms to a malignant growth. When tenderness is present it is a diagnostic point of minor importancce. Tenderness is usually present in abscess, and is usually absent in cancer. The most important point in the differentiation is the case history. A short time ago, through the courtesy of Dr. A. C. Bernays, I saw a patient who had been sent to St. Louis for an operation for cancer of the breast. The entire upper and outer portion of the gland was occupied by a hard nodular mass, with irregular, vague defined outlines. The skin was pitted and the nipple retracted. The axilla was filled with a dense hard mass. Fluctuation could not be obtained at

any point. The clinical picture of cancer could not have been clearer. However, the investigation of the case history brought out the fact that five months before she had had what she supposed was a felon on the middle finger of the right hand which had not been opened, but had been treated with poultices. After a few days the swelling went down and a small hard circumscribed tumor appeared on the back of her hand at the junction of the middle and ring fingers. The formation of this tumor was not attended with pain, neither was it tender on pressure. A few weeks later she noticed an enlargement in the axilla which, while not painful, interfered materially with the use of her arm. Shortly after this she had discovered a lump in the upper outer quadrant of the breast which had rapidly increased in size until she came to St. Louis. On examination numerous enlarged lymph nodes were found along the forearm and about the elbow. Dr. Bernays' diagnosis was abscess secondary to infection of finger. In the operating-room this diagnosis was shown to be correct. The axillary lymphatics had broken down forming an abscess which had burrowed along under the fascia, dissecting up the pectoral muscles, invading the retro-mammary connective tissue, and extending into the gland itself.

Sarcoma of the breast closely resembles in appearance the soft or medullary cancer. It appears most frequently immediately below the nipple or in the upper inner quadrant. It occurs more frequently in the young and middle aged than in the old. As a rule it grows more rapidly than a carcinoma, and during its development may remain comparatively movable and free from attachments. The tumor is smooth, the nipple is not retracted, and the lymphatics are rarely affected. A sarcoma attains a much greater size before ulceration occurs than is usual with carcinoma. As the tumor increases in size the subcutaneous veins may become immensely dilated from interference with the circulation. The development of a sarcoma is seldom painful, and the general health is not affected until ulceration and metastases occur. Great difficulty is often experienced in differentiating chronic suppurative mastitis, retro-mammary abscess and sarcoma.

Of the benign tumors of the breast, probably adenoma is the most frequent. It is of slow growth and ordinarily does not become very large, usually ranging in size from a hazel nut to a hen's egg. It occurs in the periphery rather than in the central portion of the gland and is superficial rather than deep-seated. Both breasts are rarely involved, but several tumors may develop in the same breast. An adenoma is distinguished from a carcinoma by its slow growth, mobility and absence of lymphatics involvement and ulceration. It occurs most frequently in the young, rarely after middle age, and has no effect on the general health.

3603 Lindell Boul.

DISCUSSION.

Dr. A. J. Ochsner (Chicago): I was very much pleased with this paper, because it refers to the important practical clinical part in the treatment of cancer of the breast. If a clinical diagnosis is made reasonably early, it seems to me that carcinoma of the breast is one of the very

hopeful conditions—a condition in which we can expect radical relief in a large proportion of cases. Of course, there is the element of which Dr. Roulet spoke. The fact that many of these patients never suspect the presence of a carcinoma until they notice it by accident. The breast is struck, or they accidentally feel of the breast, and then they notice this growth. If physicians generally were impressed with the importance of making an early diagnosis, it is likely that their patients would be impressed with the importance of this fact; because such matters travel. As physicians appreciate the importance of such a matter, the community begins to appreciate its importance, and as soon as the community appreciates the importance of a little nodule in the breast, the physician will be consulted as soon as a person finds it. Papers like the one we have heard will indicate the importance of at once considering the presence of a carcinoma. Suppose this tumor is not a carcinoma, the only harmless thing it could be is a fibroma, and a fibroma pure and simple, practically never exists; so it is a fibro-adenoma which means that it will presently be a carcinoma. Should we not remove a fibro-adenoma rather than theorize about the growth? Of what importance is the small amount of tissue that must be lost, to the patient, compared with the danger the patient runs through letting it remain?

While I am speaking about this, I wish to speak about another matter which has occurred again and again with every one who has had any experience with carcinoma of the breast A patient has noticed a nodule in the breast; she has said nothing to any one, has paid no attention to it. She tells some one about this and is advised to consult a physician. The physician sends her away and meditates about it. While he is meditating, the patient has been advised to massage the breast. She goes to the practitioner and he massages it. She consults another practitioner and he performs the same miracle, and presently her carcinoma has been massaged for a variable period of time, and when that patient comes to you after she has had all this massage treatment, the tumor is very much larger than when you first saw it, and not only larger, but the lymphatics are involved. Those carcinoma cells have been massaged out of the original nodule and into other portions of the lymph channels, and they may possibly form a secondary carcinoma of the liver. There is no doubt that the idea that Professor Futterer of this city brought out in his monograph on carcinoma, is correct. He states that there is a dislodgement of carcinoma cells which wander to different parts of the body, and most of them die off; but of the large number of fragments that are dislodged and transplanted, a few live and grow; and I believe that the number of transplantations is enormously increased by this system of massage. Consequently, I would say, never manipulate a tumor of the breast—never manipulate a malignant growth of any kind, unnecessarliy.

All who have operated on carcinoma of the breast have noticed that occasionally the patient returns with nodular recurrence, and upon examination it is found that the recurrent nodules are localized wherever the stitch penetrated the skin. Why is this? Simply because the needle carried a few carcinoma cells to that spot and made a graft at that point. The

same thing happens if you remove portions for microscopical purposes. I believe that making sections from the breast for the microscopic demonstrations of a malignant growth, is a form of malpractic. I was glad to hear Dr. Roulet say that he wished to speak particularly of the clinical part of this subject. If a physician is not sufficiently skilled to recognize a carcinoma of the breast when he sees it without cutting out a piece, he should consult some one who does know enough to do this. Unfortunately, those who do know enough to do this, have been taught that it is unscientific to operate these cases without having confirmed the diagnosis by a microscopic examination, and because some person in Germany has stated that it should be done, they continue to do it. But any surgeon who has observed the progress of these cases must see that it is bad practice to remove a section where the transplantation of fragments can do so much harm.

Dr. H. Hatch (Quincy, Ill.): I was very glad to hear this paper, and also to hear what Dr. Ochsner said about massaging the breast. In connection with that, I think there is another thing that we should impress upon our patients, and that is, that when a nodule is discovered in the breast, they should not talk it over with others. I have pursued this course for a number of years. When a patient comes to me with a suspicious nodule that I fear will develop into a malignant growth, where the patient will not allow it to be removed, I tell them to tell no one about it and to leave it absolutely alone—never to touch it. I have seen a number of cases where I have given these instructions and where I have told them to report at some distant time, and upon their return the suspicious nodule has entirely disappeared. I believe it is a general belief that most malignant growths are in the beginning a benign growth, and that many of them, if let alone, not stimulated to action by this process of massage that patients are so prone to resort to, and if the condition is not talked over, they will disappear. One of the best ways to get them to disappear is to have the patient cease to notice them and tell none of their friends. As soon as it is known among their friends, these friends are constantly bringing the matter to their minds, the patients become nervous, and consequently they commence this going around to different practitioners and having this constant massage treatment which stimulates the growth, and as Dr. Ochsner says, produces small foci of infection in the surrounding tissue. I had not thought about this idea of implantation where there has been recurrence, but I doubt not that it is so, and also that where the needle passes through the skin, we have caused a reinfection in the tissue. In connection with this again, I have come to the conclusion that where the case is so far advanced that the breast has broken down and we have a large sloughing ulcer, no matter what we do, we are not going to be able to save the patient. I remember seeing a breast of this kind three or four years ago where we operated, and the patient made a perfect recovery. There was no reappearance of the disease in the breast, and she went along for about eighteen months in apparent health. She then developed what another physician said was consumption. I was called in consultation the day before she died and she was being treated as a tuberculous pa-

tient. Upon her death I requested and obtained a post-mortem examination, and found the whole liver and more or less of the entire internal viscera infected and studded with carcinomatous growth.

Dr. Carl H. Andersen (Chicago): Being a young man, naturally any paper written by a young man is of great interest to me. The subject of carcinoma of the breast is a large one and one could talk a long time on the different points brought out by the doctor. I am against laboratory work in these cases. I do not believe that any one is justified in removing a section from a breast for microscopical examination and then afterwards operate if necessary. I think all cases that show lymphoids in the breast, and especially where they are accompanied by the shooting pains should be subjected to amputation of the breast and dissection of the axillary glands. Generally these cases come to us too late. In the first place the patient doesn't discover them early herself, she does not go to her physician at once when she does discover the nodules, and I don't know why. After she does go to him, if he advises operation he is generally called a butcher, and it is said that all he wants is to cut, and she goes to some one else, and so down the line. In this way the breast is thoroughly massaged and irritated, and when the surgeon does finally get the case, the breast is in a much worse condition than it would have been if he had been allowed to operate early.

Dr. H. Hatch: I don't want the last speaker to misunderstand me. I said that if you could not prevail upon a patient to have a suspicious nodule removed when they first consult you, they are to be instructed not to talk about it to any one.

Dr. W. A. Tichenor (Chicago): I have listened to Dr. Andersen's remarks about the ladies having these nodules in their breasts and always wanting to be talking about it. On the contrary, I believe that it is the experience of nearly every man who has had any observation of growths in the mammary gland, that instead of women being inclined to tell of it, they are extremely secretive about it, and do not like to have their friends know about it. This is a fortunate thing, as Dr. Hatch has said, that they do not care to speak about it, as it is the more likely to be handled and the carcinomatous cells carried to other parts of the body. Of course, it goes without saying that these tumors should be diagnosed as early as possible, and the general practitioner who does not see them so frequently, as Drs. Ochsner and Hatch have said, is not responsible for not diagnosing them as early as Dr. Ochsner would; but they do the best they can. It is important, however, that the medical profession should emphasize the fact of these growths possibly being malignant, and as Dr. Andersen has very wisely suggested, they should be removed as early as possible. The microscopical examinations that I have made, even after the tumor has been removed, have not been very satisfactory.

Dr. C. F. Wahrer (Ft. Madison, Iowa): I want to draw attention to one thing that may seem to differ very much from the opinion of my friend from Quincy. Every surgeon absolutely wants to encourage, not that a

woman who has a nodule in her breast to keep still about the matter, but that she should seek a physician's advice at once. We must educate our patients, educate all with whom we come in contact, that it is a dangerous procedure to allow any suspicious nodule in the breast to remain unnoticed until they come to you with a great big tumor in the ulcerating stage and want you to perform something that will remove it. Why people will put off for so long, until the day of salvation is past, I cannot imagine; and I think we want to instruct all with whom we come in contact that when they have any kind of a nodule, whether in the breast, whether in a man or in a woman, to go to some sensible physician and take his advice about it and let him use his best judgment. It is wise to alarm our patients about such growths as these; they may be tuberculous glands or scrofulous manifestations (whatever that may be), they may be sarcomatous, carcinomatous, or what not? so they should be attended to early and not allowed to remain until they hang down as big as a candy bucket, and until such changes have taken place as to make recovery a matter of extreme impossibility In these cases, as well as many infectious diseases, there is a dead-line, as it were, which after once being passed, it is impossible to retreat. Early and thorough attention to such matters reflects honor upon the profession, while procrastination kills our patients and throws discredit upon medical science.

Dr. W. A. Tichenor: It is not enough to educate the patient. Educate the laity, let the laity know the importance and danger of these nodules growing about the body.

Dr. Alfred Roulet: Regarding the possibility of a tumor of the breast being other than carcinoma, 85 per cent of all tumors appearing in the breasts of women over forty-five years of age are carcinomatous; of the other 15 per cent the majority are either sarcoma or adenoma. In any case where the diagnosis is doubtful, extirpation is advisable. I do not wish to be understood as depreciating the value of a careful microscopic examination, after the tumor has been removed, to render certain the diagnosis; but the cutting away of sections previous to operation cannot be too strongly condemned, as the resulting irritation is often sufficient to set up a very active tissue proliferation in the growth itself. When the cuttings have to be sent to a distance the delay is very often deleterious to the patient. I have noticed the pathologist invariably demands a complete clinical history, together with enough other information about the case to make a diagnosis without the aid of the microscope, before he gives you the benefit of his opinion.

Alaskan Diseases.—An English physician, who has been making a study of diseases in Alaska, reports that cerebro-spinal meningitis is very prevalent, scorbutus is widespread, rheumatism is frequent, pneumonia is almost unknown and insanity is by no means rare. His report indicates that vigorous physique is required to resist the Alaskan climate.

A Demonstration of Some Pathologic Specimens Illustrating the Various Diseases of Infancy and Childhood.

By I. A. Abt, M. D.,

CHICAGO.

Read before the Tri-State Medical Society at Chicago, April 4, 1902.

Case of Syphilitic Infection.—This infant was greatly cyanosed and died shortly after birth. The father acknowledged syphilitic infection, but the mother had never had the disease. There were no surface markings. The liver was of immense size and the spleen was also greatly enlarged. There was a moderate amount of ascites on opening the abdominal cavity and the mesentery glands were generally, though slightly enlarged. The child showed evidences of a double hydrocele, which is a common finding in cases of congenital syphilis. On splitting up the femur vertically with the saw, one observes in this case that the line of junction between the epiphysis and the diaphysis is an irregular one, somewhat broader than normal and is of a reddish-brown color. This irregular, or jagged line indicates a condition of inflammation at the junction of the epiphysis and the diaphysis, and is spoken of as osteo-chondritis. Osteo-chondritis is pathognomonic for congenital syphilis; it occurs not only at the site referred to, but it may be observed in any of the long bones, particularly of the extremities. There is one other thing of interest. The lungs are atelectatic—here and there, slight foci of inflammatory consolidation are observed.

On microscopic examination, it is seen that the alveoli are filled with epithelial cells and leucocytes. There is also as well a slight increase of the interstitial connective tissue, though the fatty change of the epithelium constituting the pneumonia alba of syphilitic children, is not observed in this case.

The thymus gland is very large, and upon incising it, pus exudes freely from the incision. The thymus is filled with multiple abscesses, probably due to a mixed infection. This condition is not rare, and is frequently referred to by the writers on congenital syphilis.

Diaphragmatic Hernia in an Infant.—The defect in the diaphragm in this specimen, is on the left side. A shred of muscle remains anteriorly. Three fingers can easily be passed through the defect in the diaphragm. It is observed that the heart is pressed to the right, and lies in the right thoracic cavity. The small intestine and the larger part of the stomach occupy almost entirely the left thoracic cavity. The left lung is rudimentary and occupies a small corner of the left thorax.

Microscopic examination of the lung tissue shows it to be atelectatic. The liver, though somewhat large, occupies its usual place in the abdominal cavity. The clinical data in this case were not furnished.

Inflammation of the Bowel of an Infant; Process Has not Reached an Ulcerating Stage.—This specimen is the ileum and cecum which were

removed from an eight-weeks-old infant during the past summer. Feeding had been artificial and the infant had never thrived; he became marantic and died gradually of a progressive asthenia. In the ileum you will observe that Peyer's patches are intensely swollen and raised, resembling in appearance typhoid lesions before ulceration has occurred. This form of lesion in gastro-intestinal diseases of infants, is rare; there is usually slight swelling of the solitary follicles and of Peyer's patches, but rarely so marked as we find in this case. No ulceration is to be observed in this specimen.

Meningeal Hemorrhage in a New-Born Infant.—This infant was seen in consultation a few hours after its birth. The mother was a primipara and the labor had been difficult. The child was born asphyxiated, was in a comatose condition and did not cry; it lived twenty-four hours.

The autopsy revealed the brain as you see it here. A diffuse hemorrhage had occurred between the dura and the pia mater, giving the entire surface of the brain a hemorrhagic appearance. The pia is everywhere tinged with blood. Where the membrane dips down into the longitudinal fissure, the same appearance presents, as is observed on the convex surface.

These cases are of great interest. They occur after prolonged labor, particularly in primipara after instrumental delivery, and are also observed in those conditions which are spoken of as the hemorrhagic diseases of the new-born. This meningeal hemorrhage usually gives rises to the symptoms of coma and cerebral compression. Many of the children succumb to the disease during the first few days after birth; not a few recover from the immediate effects of the hemorrhage, but remain permanently palsied.

Two Varieties of Intussusception Occurring in the Same Child.—The child in whom this occurred was fifteen months old and of illegitimate parentage. It had spent the first few months of its life in a baby farm, where it had become marantic. It was brought to the hospital in the early part of the summer suffering from an acute gastro-enteric disorder. The child did poorly and during the hot days of summer great difficulty was encountered in feeding it, the marasmus became very marked. There suddenly developed an obstruction of the bowels, with intense pain of a paroxysmal character and a bloody discharge. Collapse ensued and the child died.

Upon autopsy, the intussusception which is to be noted in the specimen which I present to you, was found. It is of the ileocolic variety. The invaginated gut is about two inches in length, is of a dark purple hue, and shows a beginning gangrene. The obstruction was complete.

These cases of intussusception in young children are not altogether of infrequent occurrence. The cases may be divided into three varieties—the enteric, which involves only the small intestine; the colic, which involves the colon, and the ileocolic which is perhaps the most frequent, and is, as the name indicates, an invagination of the ileum into the colon.

No surgical relief was attempted in this case; the marasmus was so great and the course of the disease so rapid that surgical intervention was out of the question.

I have another variety of intussusception occurring in the same child, of the enteric variety; it is the so-called agonal intussusception. It occurs during the act of death and has pathological interest, but is of no clinical significance. These cases, according to Holt, may be found in 8 per cent of all autopsies upon children under two years of age. They are nearly always multiple in character, and as has been said are of the enteric variety.

Epidemic Cerebro-spinal Meningitis.—This brain and spinal cord are from a case of epidemic cerebro-spinal meningitis which terminated fatally after eight days. The history of the case was the following: The patient was seven years of age and was admitted to the hospital June 10, 1900. He had been ill four days before admission. The onset of the disease was marked by severe headache; the child ceased playing and was forced to go to bed; he vomited a great deal, and is said to have had chills and fever. On the morning after the onset he was delirious and did not respond when spoken to. An extensive purpuric eruption was noted on the third day.

The daily notations were as follows: On the second day after admission the child vomited everything; he was extremely restless and the temperature was 100. On June 18 the condition was aggravated; the blood count showed 26,000 leucocytes and 3,850,000 red blood corpuscles. On this day a lumbar puncture was made. The fluid was turbid and was found to contain, in pure culture, the diplococcus intercellularis. On June 19 the patient continued very restless, and the pulse was small and rapid. He died at 10 o'clock p. m.

You will note that the brain seems very large for a seven-year-old child. The convolutions are flattened and the veins of the pia are very much distended. All along these veins a purulent exudate presents. These lines of pus may be observed following the engorged vessels over the entire convex surface of the brain. Isolated patches of pus are also found on the convex surface, which do not follow the vascular distribution. At the base of the brain the vessels are dilated and filled, and a layer of pus follows along the vascular distribution. A thick, purulent exudate is observed over the optic chiasm and patches may be seen to be distributed irregularly over the base of the brain. It will be noticed upon examining the spinal cord, that the dura mater has been reflected back, the vessels of the pia are engorged and the entire surface exposed by removing the dura, is covered from one end to the other with purulent exudate.

4326 Vincennes Avenue.

DISCUSSION.

Dr. W. B. LaForce: I think the thanks of the society are due Dr. Abt for this interesting exhibition of specimens. It shows another feature of our medical meetings—not a psychological feature, but the real material that forms our basis for medical science. The displaying of pathologic specimens is a matter that has been taken up by the American Medical Association with great profit to the profession, and we are certainly under obligations to Dr. Abt for his interesting presentation.

Fortnightly's Post-Graduate Course

In this department we will present a series of Practical Papers for the General Practitioner, written expressly for this magazine by the leading Medical Writers of the Twentieth Century.

DISEASES OF THE LUNGS AND PLEURA.*

A Series of Papers written expressly for this magazine, by

BY ALBERT ABRAMS, A. M., M. D. (Heidelberg),

SAN FRANCISCO, CAL.

Consulting Physician for Diseases of the Chest, Mt. Zion Hospital and the French Hospital

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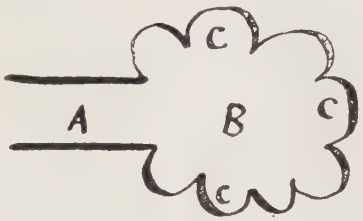
DISEASES OF THE LUNGS.

Anatomical.—The lungs are made up of thousands of lobules, and each lobule is a complete lung in miniature. The accompanying diagram shows a pulmonary lobule in longitudinal section.



A, terminal bronchus; B, the infundibulum; c, c, c, alveoli or air sacs.

The wall of an air sac is made up of connective tissue supporting the capillary net-work, elastic tissue and an occasional muscular fibre. The air sacs are about one-fiftieth of an inch in diameter and are lined with squamous epithelium. The *blood vessels* of the lungs are derived from two sources: the *pulmonary artery* which conveys blood for oxygenation and the *bronchial arteries* which convey arterial blood to nourish the lung tissue.

The *pulmonary artery* sends in a branch at the root of each lung which divides and subdivides into a meshwork of very regular and wide capillaries. These capillaries unite in four *pulmonary veins* which convey the arterial blood back to the lungs.

The *bronchial arteries* are derived on the right side from the first aortic intercostal, or by a common trunk with the left bronchial artery from the descending thoracic aorta. Two bronchial arteries are usually

* The first paper of this series, on "Cough," appeared in our issue of August 25th, 1900, and the following have appeared in their order: "Pulmonary Atelectasis," "Relation of Respiratory Diseases to the Circulatory Apparatus and the Nervous System," "X-Ray Examination in Diseases of the Chest," "General Therapeutics of Pulmonary Diseases."

present on the left side, and take origin from the descending thoracic aorta. They accompany the bronchi and run along their posterior surfaces. The *bronchial veins* receive small branches from the trachea and mediastinum and open, on the right side into the vena azygos major and on the left side into the left upper azygos vein.

The *lymphatics* of the lungs are numerous, divided essentially into three sets which communicate freely with one another. The *subpleural* set drains the pleura; the perivascular runs among the air cells around the capillaries and the peribronchial set runs in the coats of the bronchi. The lymphatics in the diaphragmatic pleura open directly into the pleural cavity by means of stomata. The bronchial lymphatic glands which receive many of the lymphatics surround the bronchi as far as their first subdivisions, and extend a considerable distance into the roots of the lungs. The nerves are derived from the sympathetic system and the pneumogastric. The latter has two sets of respiratory fibres, one in the superior laryngeal which when stimulated slows respiration, and the other in the trunk of the nerve which accelerates it.

Physiological.—At this particular time we are interested with the influence exerted by respiratory movements on the circulation of the blood and lymph. The pulmonary vessels are more capacious after inspiration than after expiration, therefore, each inspiration widens the pulmonary vessels, and each expiration contracts them. This expansion and contraction of the vessels is in direct proportion to the depth of inspiration and expiration. The effect then on the pulmonary vessels during inspiration is to lessen their resistance to the blood circuit in the lungs, a condition which favors the discharge of blood from the right heart, and the out-flow from the lungs. Another aid to the circulation is pulmonary suction, and is dependent on the elasticity of the lungs. Pulmonary suction is most pronounced during inspiration, during which time the blood is aspirated from the veins of the neck and upper extremities into the superior cava and innominates and from the abdominal veins into the inferior cava. The pulse rate increases during inspiration and decreases during expiration, a phenomenon, the explanation of which, is found in cardiac inhibition which occurs in expiration. "Inspiration favors the flow of lymph along the thoracic ducts by diminishing the pressure in the veins into which they respectively enter" (Campbell).

CIRCULATORY DISTURBANCES IN THE LUNGS.

Congestion.—Two forms are usually described—active and passive.

Active Congestion of the Lungs.—French writers describe this as an independent primary affection (*maladie de Woillez*), but the majority of writers contend that it is only a symptomatic affection. Active congestion occurs with increased action of the heart as during exertion and excitement. Renforth, the oarsman, is supposed to have died from this cause after a race.

Acute congestion is present in all acute inflammatory affections of the lungs. There is nothing definite in the symptomatology of this affection,

although many writers describe a train of symptoms made up of: chills, dyspnea, cough, moderate temperature and physical signs, consisting of defective lung resonance, fine rales and feeble breathing. Such symptoms, however, constitute the first stage of pneumonia, and it is most probable that the majority of cases of so-called acute lung congestion are in reality cases of pneumonia aborted in the primary stage.

Passive Congestion of the Lungs.—This is a well recognized affection, and is commonly divided into two forms: mechanical congestion, when there is some interference with the return of the blood to the heart and hypostatic congestion, when the position of the patient in long continued illness favors the gravitation of blood to the bases of the lungs.

Mechanical Congestion.—This is usually sequential to affections of the heart, and to properly understand the condition it will be necessary to review certain facts relative to heart work. The propulsive power of the heart is dependent on the vigor of its muscular contraction. The heart has its pauses of rest, and this occurs during diastole when it receives its nutrient supply. The heart, like every other organ, is endowed with reserve power, and this power is greatly compromised when the heart is compelled to take on increased action. It is then that the diastolic rest pause is abbreviated and cardiac nutrition suffers. A time arrives when there is no longer any reserve force to call upon, a time when the signs of heart insufficiency become established. The work of the heart is essentially expressed in overcoming resistance and heart insufficiency arises from two factors: either the force of the heart pump becomes diminished, or the resistance in the circulation becomes augmented. As a rule, heart insufficiency compromises not only the lungs, but reveals itself in circulatory disturbances elsewhere. The lungs become brownish in color, heavy, and contain less air than normal. The lung cuts and tears with great resistance. The entire condition is known as *brown* induration of the lung.

Diagnosis of Mechanical Congestion.—Dyspnea is common, owing to defective blood aeration. Cough, which is a constant symptom gives rise to the discharge of mucus, which is usually blood stained. At times, there may be hemoptysis. In association with these local signs, we have general evidence of chronic heart insufficiency, viz., cyanosis, dyspnea, prominence of the veins, edema and dropsy of the serous cavities (pleura, pericardium and peritoneum), enlargement of the liver and spleen, passive congestion of the gastro-intestinal canal, kidneys, etc. It is often impossible to say with a chronic heart lesion should hemoptysis occur., whether or not, such hemorrhage is caused by a hemorrhagic infarction or brown induration of the lung in fact, it is unnecessary to do so, for we avail ourselves of but little evidence for therapeutic purposes, insomuch as both conditions frequently coexist.

Hypostatic Congestion.—This form of congestion observed during chronic ailments is not dependent so much on the fact that the patient is constrained to occupy a definite position for a protracted period as it is to the fact, there is associated cardiac insufficiency. Aside from chronic ill-

ness, pressure on the lungs from abdominal tumors, ascites and meteorism may induce a lung congestion. Aside from gravity and pressure, the cause may be more remote. This in cerebral hemorrhage, the bases of the lungs may be congested, and the same condition may develop in morphin or other forms of intoxication. Prolonged coma may also give rise to hypostatic congestion, but in this form of hypostatic congestion, or hypostatic pneumonia we are practically dealing with an aspiration pneumonia, which will be referred to in a later chapter. To summarize our knowledge of the etiology of hypostatic congestion, two conditions are requisite: 1. Protracted recumbent posture and cardiac weakness. The *diagnosis* of hypostatic congestion is notoriously uncertain. The bases of the lung should be the object of examination, and here we may expect to find defective lung resonance, amounting to dulness, feeble respiration and liquid rales. During the course of any protracted illness. during the union of fractures and in comatose persons, it is always wise to make repeated examinations of the bases of the lung to forestall, if possible, this lung complication.

Edema of the Lung.—This affection may be present as an evidence of stasis, or the edema may be inflammatory in origin. In either event the essential pathologic condition is the escape of serum through the vascular wall into the air cells and into the alveolar wall.. The etiology of lung edema is made up of one of three predominant conditions, viz., obstruction to the free circulation, increased permeability of diseased blood vessels and paresis of the vessel walls. It is improbable, however, that these factors are alone responsible, for there must also be an increased tension of the pulmonary circulation as well as an alteration in the blood. It is infrequent as a primary affection, although I have witnessed as many as nine paroxysms in one of my patients, who in the interim of the attacks was comparatively well. Such paroxysms of acute lung edema must be dependent on a sudden failure of the right heart, although the experiments of Welch indicate that lung edema occurs when there is a disproportionate weakness of the left ventricle, so that blood accumulates in the capillaries of the lung until transudation occurs. It commonly follows affections of the heart in which cardiac insufficiency predominates, and then it coexists with hypostatic congestion, a form known as hypostatic edema. It is often a terminal complication of Bright's disease, the cachexias and anemias. The edema may be local or general. In the former condition it is contiguous to an area of inflammation, or due to some local obstruction of the blood current, when it is known as collateral edema.

Morbid Anatomy.—An edematous lung pits on pressure, is heavy and when cut, serum which may be bloody exudes. The bases of the lung are most commonly involved.

Diagnosis.—When the amount of fluid thrown out into the alveoli is sufficiently large in amount to displace all the air, we have all the objective signs of lung consolidation, viz., dullness, bronchial respiration and increased fremitus. This grade of edema is, however, rarely present, and

here we must rely chiefly on the fine moist rales heard during auscultation, and the frothy, watery expectoration. If the edema is of an inflammatory nature, such as occurs in pneumonia, blood is intimately mixed with the expectoration, and we have the much to be feared prune juice sputum. Other signs of defective aeration of the blood become manifest, viz., cyanosis, dyspnea, etc. Having established the diagnosis of lung edema, our next endeavor should be to determine whether the edema is of inflammatory origin or due to stasis.

Inflammatory Edema.—This has its genesis in acute pulmonary inflammations, notably pneumonia around tumors of the lung, infarcts, etc. The diagnostic evidence of this form of edema is based on the presence of fever, a strong pulse and the demonstration of a lung lesion, which will account for the edema.

Pulmonary Edema from Stasis.—This occurs when there is an obstruction to the return of blood to the heart through the veins leading to over-distension of the pulmonary capillaries with consequent transudation. Such transudation, however, cannot occur unless the pressure in the arteries is sufficiently maintained. This explanation tallies with the laboratory experiments of Welch who was able to induce in rabbits an artificial lung edema by weakening of the left ventricle, while the integrity of the right ventricle was maintained. Spasm of the heart must be regarded as another cause, specially of the rapidly developing form occurrring in some individuals. The experiments of Grossmann show that when muscarin is injected into some animals, spasm of the myocardium results which is more evident in the left than in the right ventricle. Such injection increases the pressure in the pulmonary artery and diminishes it in the aorta and lung edema is the invariable result. The edema of stasis occurs without fever, with small pulse and accentuation of the second pulmonic tone.

Differential Diagnosis.—Hypostatic congestion and lung edema may coexist. Usually no fever attends the former, unless it should pass over into a pneumonic process (hypostatic pneumonia). Hypostatic congestion usually presents more pronounced signs of air displacement in the alveoli than does lung edema, and in the former signs of consolidation increase from below upward. If, to the signs of hypostasis, moist rales are heard with a frothy liquid expectoration, lung edema complicates hypostatic congestion.

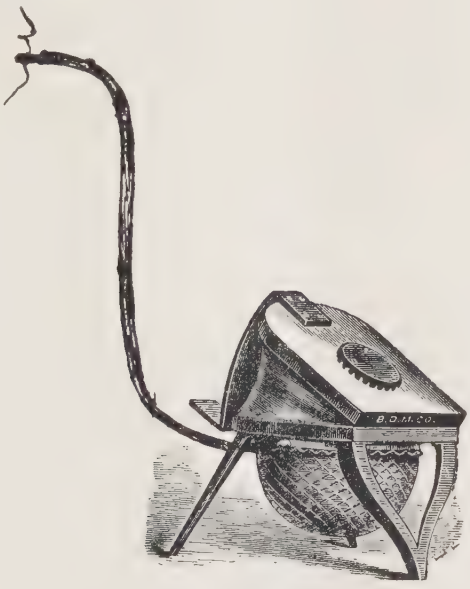
Treatment.—In *lung congestion* notably the hypostatic form, the conditions favorable for its genesis must be borne in mind, viz., an enfeebled heart with a patient compelled to adopt a constrained posture for a protracted period. Such conditions favor gravitation of the blood to the dependent parts of the lung resulting in hypostasis which only becomes inflammatory in its nature when micro-organisms invade the congested area and develop broncho-pneumonic patches. The indications for treatment then in hypostatic congestion must fulfill the following indications: 1. Change of posture of the patient frequently during illness; 2. Exciting the respiratory muscles to increased activity, and, 3. Maintaining cardiac

vigor. The treatment is therefore essentially prophylactic. I know of no better aid in promoting respiratory activity than by mechanic lung insufflation. The apparatus which I use for this purpose is a foot bellows (see figure) to which is attached a rubber tube in the end of which is a mouth-piece for the patient. I instruct the patient to first take a deep breath, and to compress his nostrils, after which I pump the air into his lungs. The lung distension secured by this apparatus is enormous, greater even than can be attained with compressed air by means of the pneumatic cabinet. The pneumatic cabinet is so important an apparatus in the treatment of pulmonary diseases that it is unfortunate we cannot employ it at the bedside of our patient. With the apparatus just referred to we can accomplish practically all the work that can be done with the cabinet. I append the results attained with the bellows in an average case as compared with the pneumatic cabinet.

Vital capacity of an adult before entering the pneumatic cabinet, 175 cubic inches. After making a deep inspiration with the compressed air of the cabinet, the vital capacity was increased to 210 cubic inches. The same patient after receiving the air obtained from the bellows increased the vital capacity to 310 cubic inches.

The treatment of *lung edema*, which is usually a secondary affectio must be immediate and heroic for the prognosis is always grave. In no other affection of the lung is heroic medication more permissible. To combat the edema, two essential conditions must be regarded: 1. Relief of an engorged pulmonary circulation and enfeeblement of the right or left ventricle, or both, for whatever theory may be correct in the etiology of lung edema the essential condition is a weak heart. Venesection offers the best prospect of relief in most cases, although the immediate employment of cardiac tonics is absolutely indicated. Recourse must be had to cardiac tonics which are rapid in action. Among the best are camphor, brandy, ether, ammonia, supra-renal capsule, caffein and strychnia. *Camphor.*—This agent acts on the vasomotor center and increases blood pressure, and is unquestionably the most rapid acting heart tonic. It must be given hypodermatically dissolved in olive oil in the proportion of 1:9, and about 1 cm. injected, and the dose repeated several times if necessary until improvement in cardiac action is noted. Very often it may be combined with ether, although the latter preparation may be followed by unpleasant symptoms. Ether may be used alone, and several injections (1 cm.) may be necessary. Brandy likewise acts rapidly when given hypodermatically. Champagne taken by the mouth is also possessed of rapid action, the carbonic acid which it contains facilitating the absorption of the alcohol. Various wines, like sherry, port and malaga act more promptly when taken warm. In comatose patients the warm wine may be administered per rectum. The inhalation of ammonia is of great value. I have recently observed by aid of the Roentgen rays, that, when this agent is inhaled, one may induce rapid contraction of the heart (heart reflex). Inhalations of oxygen subserve a useful purpose. Such inhalations likewise provoke the heart reflex, as I have likewise demonstrated, and the deep inhalations facilitate the pulmonary circulation. *Caffeine* in the

form of its soluble preparations, sodium benzoate (containing 45.8 per cent of caffeine) and sodium salicylate (containing 62.5 per cent of caffeine) are rapid in action when given by injection. The dose of the former is from 3-10 grains, and of the latter 2-8 grains. The *suprarenal substance* is a rapid and efficient cardiac stimulant. It possesses the advantage of being a harmless preparation. It is given in capsules containing five grains or more. The capsules should be chewed and swallowed without water. If the patient is unconscious a solution of the extract dropped into the mouth is absorbed almost as readily as when given hypodermically. The effects on the heart are manifested in less than five minutes, and last two or three hours. No other heart tonic acts as quickly. It has



Foot bellows for mechanic lung insufflation,

neither cumulative action nor any untoward effects. The active principle of the gland, *adrenalin* is destined to replace the suprarenal substance. The dose of a solution of adrenalin chloride, 1:1000 by the mouth is from 5-30 minims, although in urgent cases, it may be given by the intravenous route. *Strychnine* is also an efficient agent, but it must be given hypodermically in doses larger than ordinarily recommended. There are other cardiac tonics which influence the strength of the heart and they may be given to supplement the action of the more rapidly acting cardio-tonics. *Digitalis* is the prototype of such tonics. It increases the energy of each cardiac systole and raises the arterial pressure. Prolongation of systole means rest of the heart during diastole and a rise of blood pressure means increased diuresis with unloading of the venous system and a drainage of the edematous accumulations in the lungs. One has no time to consider

indications nor contraindications in the use of digitalis in relieving pulmonary edema, yet in a general way it is wise to regard them. The indications are: energizing the systole when that is weak, and the contents of the chambers incompletely emptied; when cardiac action is increased, the chambers dilated and the arterial pressure low. It is contraindicated when the heart is not dilated, when the rapidity of cardiac action is not increased and when the blood pressure is normal or high. The real question in the use of digitalis is not so much its indications and contraindications as the reliability of the preparation. The most reliable method of administration is the use of the infusion. If the digestive apparatus becomes affected by its use, or if the patient is unconscious it may be given per rectum. Attempts have been made in order to secure more accurate dosage to replace digitalis with its active principles, but thus far the attempts have been futile. The nearest approach to this has been reached by the employment of Merck's *digitalin* (dose by injection gr. 1-10 to ½). Next to digitalis in efficiency is *strophanthus.* It has no cumulative action nor by effects and may be given over a great period of time. It is given in the form of the tincture (dose, 10 minims). It may be combined with digitalis. Other methods may be employed to energize cardiac action. My investigations show, that the application of hot bags, mustard plasters, etc., to the precardial region induce cardiac stimulation by provoking the heart reflex, and for this purpose nothing equals douching this region with carbonic acid in solution obtained from any ordinay bottle of charged water. Striking the heart region by means of a percussion hammer acts in the same direction, The suggestion has been made in desperate cases to puncture the right heart with a small trocar and remove some of the blood. Attempts have been made in other directions to evacuate the edematous fluid from the bronchial tree, and for this purpose *emetics* have been employed. The use of emetics, however, are to be discountenanced, for they invariably induce temporary collapse by compromising the cardiac vigor, feeble as it already is. Sahli has thrown out the suggestion of tracheotomizing the patient, and with an elastic catheter to aspirate the fluid. The use of the bellows, as suggested in the treatment of hypostasis, may prove of great value in the prophylaxis and treatment of lung edema.

(TO BE CONTINUED.)

GIFT TO THE JERSEY CITY HOSPITAL.—Mr. Cornelius Zabriskie has offered to give $150,000 toward building a new City Hospital in Jersey City, on condition that residents of the city shall raise a like amount by subscription. Mr. Zabriskie also makes it a condition that politics shall be kept out of the hospital management. Dr. John D. McGill of the Health Board has promised to give $25,000 toward the public subscription, and to do all that he can in aiding to collect the remaining $125,000. It is expected that Mayor Fagin will give the project his official sanction. The control of the hospital is now being contested by the health authorities and the politicians, and if Mr. Zabriskie's offer is accepted this unseemly quarrel will be stilled.

Favorite Prescriptions

Liniment in Rheumatism.—

℞ Spir. camphorae.....
Tinct. opii.....
Spir. ammonae.....aa ℥ss
Ol. olivae..... ℥j

M. Ft. emulsio. Sig. Apply locally four or five times daily.—*Med. News.*

Senile Debility.

℞ Syr. hypophos. comp..... ℥iij
Celerina (Rio)..... ℥ij
Acidi. phosphorici dil..... ℥j

M. Sig.—Teaspoonful four times daily.

Bacelli's Malaria Mixture.—The formula for Bacelli's malaria mixture is as follows;

Quinine sulphate.....
Tartaric acid.....aa 45 grn.
Sodium Arsenate..... $\frac{5}{6}$ grn.
Water..... 10 oz.

Dose: Tablespoonful four to six times a day.—*Merck's Archiv.*

Heart Failure in Typhoid Fever.

℞ Spir. amoniae arom..... fl. ℥ iv
Tinct. digitalis..... fl. ℥ij
Elix. simp..... fl. ℥iv
Aq. dest.....q. s. ad fl. iij

M. Sig. Shake. One teaspoonful every three hours.—*The N. Y. State Jour. of Medicine.*

Acute Gastrointestinal Catarrh.—

℞ Creosoti..... *m* xij
Tinct. Opii camphoratae..... ℥ ix
Bismuthi subnitratis..... ℥iij
Pepsinae scales..... ℥j
Syr. aurantii corticis..... *m* xxx
Aq. menth. piperitae.....q. s. ad ℥ iij

M. Sig. One teaspoonful every two hours for a child of two years. Vary with the age and severity of the case.—*Med. Rec.*

Whooping Cough.—

℞ Tinct. doserae.....
Tinct. grindeliae.....aa gtt. xv
Tinct. belladonae.....
Tinct. aconiti.....aa gtt. x
Syr..... ℥v
Aq. tiliae..... ℥iij ℥ij

M. Sig. One teaspoonful every two hours.—*Le Progres Medical.*

Dr. D. L. Bulkley is credited with saying that for some time past he has prescribed ichthyol by the mouth, 10 to 15 drops, in capsules, three times daily, and finds that this, through its action on the liver and intestines, will cure nearly every case of hemorrhoids. In fact, he looks upon its internal use as a specifie.

The Maltine Contest.—Our readers will be pleased to learn that the offer of two prizes—one of $1000 and the second of $500—made by the Maltine Company for the two best essays on "Preventive Medicine," brought the company 208 essays. These papers are now in the hands of the judges, Dr. Daniel Lewis, of New York, Dr. Chas. A. L. Reed, of Cincinnati, and Dr. John Edwin Rhodes, of Chicago, whose decision will be announced as soon as it is possible to classify and make their selection. This contest has demonstrated the value of the undertaking; such contests have been usual in Europe, and have been a success from all points of view, but America has not taken to the idea with the promptness that one would expect. With a record of 208 papers for the Maltine contest we may safely predict that the contest plan will flourish from this on. We've many good things to thank the Maltine Company for, and this is not the least.

Ford Sanitarium for Tubercular Patients.—Dr. A. E. Ford, of Denver, has lately completed arrangements for the erection of a sanitarium at the foot of Mt. Robinson, near Custer, Colorado. The location selected is ideal from every point of view, the scenery is superb, there is an abundance of shade and protection from all extremes of temperature and weather. Easy mountain climbing and health-giving outdoor exercise, both afoot and horseback will be features of treatment, all of which will be conducted under the direct supervision of Dr. Ford. The consulting staff of the sanitarium will include many of the best known specialists of the country. The sanitarium will be constructed on the cottage plan and buildings will be erected of logs as demanded. One commodious log house will be occupied as the central and office building, and will be an idealized and unique adaptation of the familiar log cabin of the mountains. In the near vicinity smaller log houses, of a few rooms each, will be constructed and occupied by distinct classes of patients. A central dining-room and library will be provided also lounging and writing-rooms. Plans are under way for a gymnasium, a bowling alley and billiard room for the accommodation of guests.

TO MADRID, SPAIN, AND RETURN FOR $265.00.

The Fourteenth International Medical Congress will be held in Madrid, from April 23d to 30th, 1903, and the undersigned is organizing a party of physicians to attend its sessions. Arrangements have been perfected for a high-class tour of Spain, via Gibraltar and Cordova, occupying in all about thirty days, eight of which will be spent in Madrid. The expenses from New York and return will be **$265,** including *all necessary expenses*, high-class ocean and railway travel, hotel accommodations, sight seeing, and services of an experienced conductor and interpreter. Full information and program may be obtained by addressing Dr. Chas. Wood Fassett, St. Joseph, Mo.

MEDICAL MEMORANDA.

ALETRIS CORDIAL is indicated as a prophylactic remedy against post-partum hemorrhage, uterine weakness, great development of the fetus and of the adnexa, and in those cases in which there is a disposition to hemorrhages.

Dr. Kochler, Chicago, Ill., says: "I used terp-heroin (Foster) in two cases of acute and one case of purulent bronchitis with satisfactory results, and in one case of pulmonary tuberculosis. I gave it with port wine with apparent relief to the patient."

Ptomaine Poisoning (Reprinted from *The Medical Summary*, May, 1902)—During the past summer I had, perchance, more cases of ptomaine poisoning than in all my previous twenty-nine years of active practice. I presume that the prevalence was greatly due to the extraordinary heat of this summer. Notwithstanding the severity of some of the cases, my patients all recovered. Before entering into a detailed description of some of the most severe cases, a definition of the word "ptomaine," with some views of competent authors, will be well placed here. "Ptomaine," says V. C. Vaughan, "may be defined as an organic chemical compound, basic in character and formed by the action of bacteria on nitrogenous matter." He further states that "some fish are always poisonous. Others are poisonous, or at least markedly so, only during the spawning season. Still others are subject to epidemic bacterial diseases, and those affected with certain of these diseases furnish flesh that is toxic to man, or in other words, the acterial disease is transmitted to man with his food. Lastly, fish, like other kinds of meat, may become infected with saprohpytic germs that may harm man." Schmidt says: "The poisonous substance is not distributed throughout the animal, but is confined to certain parts. The poisonous portion cannot be distinguished from the non-poisonous, either macrosopically or microscopically." I treated altogether twelve cases, of which nine were fish, and three lobster poisoning. The best illustration of a severe case of fish poisoning, is the case of William R., a grocer, thirty-two years of age, of robust and good health. He made his lunch of fish (none in the family could give me any information about the class of fish). It was an unusually hot day, in the month of July. He felt no discomfort until after midnight that day, when he was awakened by nausea and griping pain in his bowels. Soon vomiting set in of mucus, colored with bile When I was summoned, I found the man with cold perspiration pouring down his face. Soon after, fever set in to a temperature of 102; pulse, 140; respiration about 40, shallow and irregular. Pain in the stomach and intestines, with great sensitiveness on pressure. I proceeded to wash his stomach and large intestines, administering right after a dose of five grains of calomel, following it up, the coming morning, with a bottle of citrate of magnesia, for the cleansing of the small intestines. Morning's temperature, 101; pulse, 130; with excessive tenderness to the digestive tract. Second day, temperature the same, pulse more firm; sensitiveness to stomach and bowels diminished; having had a number of

watery stools during previous day and night. I prescribed an antiseptic intestinal wash, glycozone, two ounces, hot water, twenty-four ounces, for mornings and evenings. At my evening's call the temperature was 100; pulse 110; respiration 28. Having had some favorable experience with the internal use of glycozone in acute gastritis, I then prescribed a teaspoonful to be given, diluted with water, every three hours. This treatment was kept up for a week, until all unfavorable symptoms disappeared.

The other case of serious nature was a lobster poisoning. Mrs. M. S., about twenty-five years of age, was eating a "fresh" lobster in a first-class restaurant, at night, after a theater performance. She felt some discomfort right after eating it, but thought to counteract it by drinking a big dose of whiskey. She slept all night without disturbance. However, in the morning, when I was summoned, found her suffering from nausea, vertigo, ringing in the ears as she expressed it, pain in all the joints, and griping pain in the bowels; no stool. Temperature, 101.5; pulse, 140; respiration, 30. The same treatment as above was prescribed, and the woman made a quick recovery. All other cases were treated similarly, with gratifying results. However, taking good advice from my first case, I started with the antiseptic treatment at once, as I don't know of any better remedy to stop vomiting than glycozone.

ALEX. RINA, M. D., New York.

Seemingly Astounding, Yet Usual.—Dr. R. C. Burrow, of Maxon Mill, Ky,, gives the following experience:

Miss L. H. had been confined to her bed for three months, suffering with malarial fever. When I was called, I found fever broken, but patient had hardly strength enough to sit up. As she had never menstruated, her mother thought this, in a great measure, the cause of her trouble. After three months' treatment she was again in fair good health, her menses also appearing, but very painful and scanty. I rested treatment for three months more, hoping that good nourishment and nature would re-establish all functional activty. Her suffering, however, grew worse at each menstruation. I then prescribed ergoapiol (Smith), one capsule four times a day, beginning three days before the expected period. This treatment gave immediate relief and resulted in regular and perfect menstruation. It is now four months since the administration with ergoapiol (Smith) has been stopped, and she has had no indication of the previous trouble.

Mrs. C., married, had severe attack of la grippe last winter. Had not menstruated for the past four months. I prescribed ergoapiol (Smith), one capsule every three hours. Menses appeared on the third day, and again at the last menstrual period.

Mrs. F., married, consulted me in January. Said she had not menstruated for two months. I suspected pregnancy and declined to treat her. She called again in May and declared positively that she was not pregnant. I then prescribed one capsule of ergoapiol (Smith) before meals and two at bed-time. Menses appeared on the third day.

B. S., single, teacher. Menstruation began at the age of thirteen. Each period, however, was accompanied with the most excruciating pain, compelling her to take to bed for two and three days. This patient,

who was large and in good health, said menstruation was free enough and all would be well but for terrific pain which usually set in after menstruation had started. While attending school last spring, the pains at each period were particularly severe, resulting in convulsions each time. Her physician advised her to discontinue teaching and return home, which she did. During her last menstruation I prescribed ergoapiol (Smith), with the happy result of no pain or inconvenience whatever, and she is again attending to her regular duties.

Fallacies Concerning Uric Acid Solvents.—The so-called "uric acid solvents" prove to have no really effective action in promoting absorption of uric acid and urates. Lithia and other alkaline salts, piperazine and formaldehyd derivatives which under various trade names have been recommended on the theory of their forming soluble urates, do not stand investigation and have been shown to be often positively injurious—in fact nothing has yet been discovered which will re-dissolve in the physiological laboratory of the human economy uric acid or urates already deposited in the tissues and as one part of uric acid requires 6000 of water to dissolve it at body temperature the fallacy of drinking large quantities of mineral water or taking hot baths is self-evident. (See recent literature Paul Luff etc.) The treatment of arthritic patients must still be on the lines of diet; severe attacks however can be prevented, aborted or relieved by colchi-sal capsules the basis of which is a solution of crystalized colchicine in methyl salicylate (from betula lenta). Their success with the profession has been so great that the published working formula has been blindly copied and capsules dyed green are frequently substituted for the original colchi-sal capsules. It is essential therefore to prescribe capsules of colchicine-methyl-salicylate only under their registered name of colchi-sal in order to obtain results which are uniformly successful in acute or chronic gouty and rheumatic manifestations and in those obscure forms of arthritism such as hay fever, asthma, hepatic gout (with those distressing symptoms known as "billious headaches"), urticaria, etc. Where physicians are accustomed to the logical results of this peculiar and harmless combination and fail to relieve cases which should yield to treatment, it is pretty safe to infer that the prescription has been filled by one of the numerous cheap substitutes for colchi-sal capsules and the United States agents, E. Fougera & Co,. of New York, cannot be responsible for untoward or indifferent results, unless the original package bear their name on the labels.

Papine.—In discovering this drug Battle & Co. has conferred a lasting favor on the medical profession. We know the opium of which they make their papine is the best. Papine has a place in my medicine case and it is emptied as often as any vial in the whole case. I nearly always have a bottle with my obstetrical cases for after pains, and always feel like it will do the work. I used it lately on a case of threatened abortion with excellent results, also in a case of severe uterine colic, I find that with papine I do not have to use my hypodermic syringe so often.

Wyatt, Texas W. E. Russell, M. D.

One of the most interesting, novel and valuable inventions of recent years, is the word-writing typewriter, invented by W. H. Bennington, of Kansas City. It is claimed for this machine, that it will revolutionize the typewriter business and displace existing typewriters just as certainly as the new printing press, self-binder or header displaced the old style machines of their class. We call the attention of our readers to the advertisement of this company on another page of this journal.

Two Old Friends.—We have received some five-grain antikamnia tablets, and also tablets of this drug combined with codeine. Antikamnia, as its name implies, is an analgesic and anodyne and it has gained much favor in the United States both for this and for its antipyretic action. It has been proven not to depress the heart, after the manner of many other coal-tar preparations. Each antikamnia tablet contains 5 grs. of the drug (the usual dose), which can be repeated every fifteen or twenty minutes, until three or four doses have been taken. Antikamnia and codeine tablets consist of 4¾ grains of antikamnia and ¼ gr. of codeine and have been especially brought forward for the treatment of pain where spasm or physical causes of irritation exist. Neuroses due to suppressed or irregular menses, particularly during the menopause, seem more amenable to this combination than to antikamnia alone. Antikamnia and codeine tablets are especially indicated in membranous affections of the lungs, throat and bronchi. Both tablets merit a trial in neuralgia and spasmodic ailments and as their freedom from injurious action upon the heart and circulation is invariable, they will certainly continue to be received by the profession with favour.—*Edinburgh Medical Journal.*

Coca as a Heart Tonic.—We are accustomed to consider the term stimulant as a something which acts as whip to goad the animal on to greater physical exertion, following which there is a corresponding period of depression. Whether this be true or not, there are conditions where any means may be allowable, and necessary as in passing some slough of extreme emergency where the physician stakes all on the success of his measures. Properly such an application of stimulant belongs only to an alcoholic, but owing to the paucity of terms of concise definition, other substances are also pronounced to be stimulants which do not possess the qualities. Because of this association of terms in substances differing in properties they are all commonly considered as of identical action with alcohol. Coca is therapeutically classed as a nerve stimulant, but, unlike any other substance, its use is not followed by depression. The action of coca is unique. Primarily it affects the cerebral cells, but with this it has a depurative influence on the blood, freeing the circulation from waste, and, because of this rendering the possibilities for repair in every organ of the body favorable. Owing to the subtle action of coca on the muscular structure, it has rightly been advocated in disease of the heart associated with muscular deficiency. Unlike digitalis it does not simply increase muscular power, an effect which in certain cases might be a disadvantage, but by a chemico-physiological change induced in the muscular substance it aids toward repair, a process which is augmented through a purified blood stream. The ideal of a tonic-stimulant the use of which tends to the permanent betterment of any depressed condition, is presented in Vin Mariani, which embraces the true qualities of the whole coca leaf, selected under special facilities, and scientifically preserved in a mild and wholesome wine.